



# Helispecs offer Improved Breathing for R22's

**HELISPECS** of Taupo maintain working helicopters and if there is one item that causes endless headaches, it is the exhaust systems attached to the ubiquitous Lycoming IO-320/360 engines that are found in the Robinson R22 series and the Hughes/Schweizer 269 series. Exhaust systems seem to be almost an afterthought for airframe designers and their sometimes tortuous installations have caused many engineers to call for an early 'Smoko' break at inspection time.

For Roger Maisey of Helispecs the answer was clear cut. With no alternative systems available in New Zealand and with more than 160 R22's of various models active on the New Zealand register, the time was right to design a new system. The goal was to make life for the engineer more tenable and to offer some definite performance advantages for the earlier R22 Beta series helicopters. The outcome is a complete

replacement system manufactured from aircraft grade stainless steel that can be fitted in one man hour of time.

Having some experience in the design and manufacture of automotive branch exhaust systems, Roger applied his knowledge to the R22 Beta. The performance results to date are encouraging. As well, the cabin heating muff was redesigned to lower the incidence of CO leakage into the cabin via the heating system. Final cost is yet to be established but Roger assures that it will be less than the OEM unit. Installed weight is approximately the same as the OEM unit and noise level output is no higher than the original installation. Manufacture is carried out in the Helispecs workshop at Taupo.

Test flying of the development unit was carried out by Mark Law of Frontier

Helicopters, Whakatane. A detailed comparison was made under working conditions of the OEM unit first (to set the parameters) and then the new "Helipower" system was installed – within one man hour - and the testing regime repeated. Tests were conducted between sea level and 3000 feet. Performance at altitude was impressive according to Mark, with a full two inch gain in manifold pressure being observed. In flight performance for

an R22 Beta with the Helipower unit installed was equal to the hot and high performance of a Beta II model.

The new system will make an ideal fitment when the time comes for top overhaul or engine replacement as the opportunity will also exist to undertake some gas flow work on the cylinders. This will help assure power plant longevity with increased performance and undoubtedly savings in direct operation costs.

Modification

approval is currently pending with CAA and upon granting of the Mod an STC will be applied for. Success of the initial unit has prompted development of a similar unit for the R22 Beta II and now the Hughes/Schweizer 269 series is also in the Helispecs Helipower sights. The Robinson R44 series is crying out for a better aftermarket system as well said Roger - "It won't be too difficult to bring forth a unit that is more durable than the existing OEM unit".

The addition of a performance exhaust system to the Helispecs portfolio increases the capability of a helicopter maintenance company identifying niches to improve the original product. To discuss the Helipower unit and all your helicopter maintenance requirements contact Roger on 027 498 2812 or email: [heli.speccs@hotmail.com](mailto:heli.speccs@hotmail.com)



*The R22 solution is compact and elegant. Helispecs plan to repeat the development process for the Hughes/Schweizer 269 series and the Robinson R44.*



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